APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,481	09/23/2005	Roland Aubauer	112740-1061	5409

29177   7590   06/26/2008
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EXAMINER
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ART UNIT	PAPER NUMBER
2626	

MAIL DATE	DELIVERY MODE
06/26/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/550,481	AUBAUER, ROLAND
	Examiner	Art Unit
	GINA W. LEE	2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 September 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>10-18</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>10-18</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>23 September 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>23 September 2005, 14 February 2008</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2.   The disclosure is objected to because of the term "voice recognition", which is used throughout, for what now is called "speech recognition" in the speech signal processing art. While "voice recognition" and "speech recognition" were once used interchangeably, these days the terms must be strictly distinguished. The term "voice recognition" is now considered synonymous with "speaker recognition", denoting the identification of who is speaking, while "speech recognition" (or "word recognition") denotes identification of what is being said (information content).

Appropriate correction is required.

Claim Objections

3.   Claims 10-18 are objected to because of the following informalities: the claims use the term "voice recognition" for what is more properly termed "speech recognition" (see above under objection to disclosure). Appropriate correction is required.

4.   Claim 10 is objected to because of the following informalities: the preamble of the claim

states that the invention claimed is a "method with a … system". It is unclear if both a

method and a system are being claimed, or a method to be used on a particular system

Appropriate correction is required.

5.   Claim 14 is objected to because of the following informalities: although the claim is

dependent on claim 10, and seems to further modify a limitation of a parent claim ("wherein

for recognition of a voice utterance…"), no step of voice recognition is recited

in claim 10. Appropriate correction is required.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gammel et

al. (US 5,832,429), hereinafter referred to as Gammel, in view of Hon et al. (US 5,852,801),

hereinafter referred to as Hon.

8.   With respect to independent **claim 10**, Gammel teaches a speaker-dependent

voice recognition method with a voice recognition system *(Fig. 1; col.

1, lines 6-8; col. 2, lines 1-20, the invention relates to speech recognition and a speech*

recognition database in a system comprising speaker dependent templates for recognition),

the method comprising:

- providing that voice utterances of a user are trained and
  commands are assigned to the trained voice utterances *(col. 2,
  lines 12-20, telephone system contains speaker dependent templates for entry names and
  corresponding phone numbers for speed dial)*;

but although Gammel teaches a method to assign the voice utterance to a new

command *(Figs. 4, 5, 7-9; col. 3, lines 33-45; col. 5, lines 12-23, new speed dial names are

enrolled in a speed dial list)*, Gammel does not teach that it is done upon non-

recognition of a voice utterance and via the voice recognition

system. However, the examiner contends that this concept was well known in the art, as

taught by Hon.

In the same field of endeavor of speech recognition, Hon teaches a method for speech

recognition in which if a word is not recognized *(Fig. 2, element 115; col. 7, 28-35; col. 8, lines

28-29)*, the user is prompted to invoke a new word acquisition method *(Fig. 2, element 100, Fig.

3, element 169; col. 7, lines 36-48; col. 8, lines 50-60)*, and the unrecognized word may be added

to the lexicon *(Fig. 2, element 117, Fig. 4, element 187; col. 7, lines 49-51; col. 9, lines 36-38)*,

along with other user-provided attributes *(col. 9, lines 36-38)*. It is noted that a command is also

a word with associated attributes, and that the recognized word may be a command *(col. 6, lines

33-36)*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the speech recognition method of Gammel with the automatically

invoked step of adding a new voice utterance, as taught by Hon, in order to increase ease of use

for users by not requiring prior knowledge of words not in the lexicon and providing a user

interface for entering a word into the lexicon *(Hon, col. 1, line 57-col. 2, line 15)*.

9.   With respect to **claim 11**, Gammel in view of Hon teaches everything claimed, as applied

above (see claim 10); in addition, Gammel does not but Hon teaches a `speaker-`

`dependent voice recognition method as claimed in claim 10,`

`wherein, upon the non-recognition of the voice utterance by the`

`voice recognition system` *(Fig. 3, col. 8, lines 28-29, the word cannot be*

determined)`, the user may one of repeat the voice utterance and`

`assign a new command to the voice utterance` *(Fig. 3, col. 8, lines 31-32, the*

user repeats the word or phrase (157)).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify the speech recognition method of Gammel with the step of allowing the user

to repeat an unrecognized utterance, as taught by Hon, in order to increase the probability of

correct recognition in the event that the user misspeaks or is otherwise inconsistent in speaking.

10.   With respect to **claim 12**, Gammel in view of Hon teaches everything claimed, as applied

above (see claim 10); but Gammel in view of Hon does not explicitly teach a `speaker-`

`dependent voice recognition method as claimed in claim 10,`

`wherein if no command has yet been assigned to a voice utterance,`

`the voice recognition system, after having been activated, offers`

`the training of a new command`. However, Gammel does teach that the telephone

system stores speaker dependent templates, which are used for recognition for commands *(col. 1,*

lines 38-39; col. 2, lines 16-18 and 31-33), as well as a method for adding templates to the

database *(Figs. 4, 5, 7-9; col. 3, lines 33-45; col. 5, lines 12-23)*. Since the method of Gammel

cannot be implemented without enrolled voice commands, the templates must have been created

prior to using the method. Therefore, it would have been obvious to one of ordinary skill in the

art at the time the invention to modify the method of Gammel to allow the user to create the

templates if they have not already been created, because this enables the speech recognizer to be

more useful to the user.

11.   With respect to **claim 13**, Gammel in view of Hon teaches everything claimed, as applied

above (see claim 10); in addition, Gammel does not but Hon teaches a speaker-

dependent voice recognition method as claimed in claim 10,

wherein upon the non-recognition of a voice utterance *(Fig. 3, col. 8,*

lines 12-18, the desired word is not the most likely recognized word) for a command

already trained by the voice recognition system *(Fig. 3, col. 8, lines 20-*

28, the desired word may be found on an N-best list of alternatives; Fig. 4, lines 15-19, the

unrecognized word may already be in the lexicon), the user may select the

command and assign the voice utterance to the selected command

(Fig. 3, col. 8, lines 20-28, the unrecognized word is selected from the N-best list; Fig. 4, col. 9,

lines 15-27, the speech model is modified to increase the probability of recognition in the

future).

        It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify the speech recognition method of Gammel with the step of allowing the user

to correct an unrecognized utterance, as taught by Hon, in order to increase the future accuracy

of the system by modifying it to a particular speaker's utterances *(Hon, col. 9, lines 15-27)*.

12.   With respect to **claim 14**, Gammel in view of Hon teaches everything claimed, as applied

above (see claim 10); in addition, Gammel does not but Hon does teach a `speaker-`

`dependent voice recognition method as claimed in claim 10,`

`wherein for recognition of a voice utterance, a voice pattern is`

`generated which is assigned to the voice utterance` *(col. 5, lines 46-65,*

utterance is divided and converted into observed vectors to represent the utterance data) .

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify the method of Gammel with the vector creation step of Hon, because it

would improve accuracy by fine-tuning the recognizer to a particular user's speech.

13.   With respect to **claim 15**, Gammel in view of Hon teaches everything claimed, as applied

above (see claim 10); in addition, Gammel further teaches a `speaker-dependent voice`

`recognition method as claimed in claim 10, wherein before a`

`command is assigned to a voice utterance, a check is carried out`

`to determine whether the voice utterance is similar to previously`

`stored voice utterances` *(Fig. 5, col. 6, lines 38-49, a check is made to determine if*

the word is already on the list or close to a word that is on the list) .

14.   With respect to independent **claim 16**, Gammel teaches a `voice recognition`

`system for a speaker-dependent recognition of voice` *(Fig. 1; col. 1,*

lines 6-8; col. 2, lines 1-20, the invention relates to a speech recognition database in a system

comprising speaker dependent templates for recognition), `comprising:`

- `a voice recording device for recording a voice utterance of` `a user of the voice recognition system` *(Fig. 1, col. 2, lines 6-8, system comprises a recognition and record circuit (14))*;

- `a search engine for accessing a database which contains an` `assignment between voice utterances and commands in order to` `find a command assigned to the voice utterance` *(Fig. 1, col. 2, lines 29-33; col. 2, lines 12-20, processor (12) with comparator and memory (15) compares user's utterance to speaker dependent templates for entry names and corresponding phone numbers for speed dial)*; `and`

- `a conversion device for converting the command found due to` `the voice utterance` *(col. 2, lines 48-55, telephone system recognizes command phrases and proceeds according to the requested command, for example automatically dialing numbers)*

but although Gammel teaches `assign[ing] the voice utterance to a new` `command` *(Figs. 4, 5, 7-9; col. 3, lines 33-45; col. 5, lines 12-23, new speed dial names are enrolled in a speed dial list)*, Gammel does not teach that it is done upon `non-` `recognition of the voice utterance.`

However, the examiner contends that this concept was well known in the art, as taught by Hon.

In the same field of endeavor of speech recognition, Hon teaches a system for speech

recognition in which if a word is not recognized *(Fig. 2, element 115; col. 7, 28-35; col. 8, lines 28-29)*, the user is prompted to invoke a new word acquisition method *(Fig. 2, element 100, Fig.*

3, element 169; col. 7, lines 36-48; col. 8, lines 50-60), and the unrecognized word may be added

to the lexicon *(Fig. 2, element 117, Fig. 4, element 187; col. 7, lines 49-51; col. 9, lines 36-38)*,

along with other user-provided attributes *(col. 9, lines 36-38)*. It is noted that a command is also

a word with associated attributes, and that the recognized word may be a command *(col. 6, lines
33-36)*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the speech recognition system of Gammel with the automatically

invoked step of adding a new voice utterance, as taught by Hon, in order to increase ease of use

for users by not requiring prior knowledge of words not in the lexicon and providing a user

interface for entering a word into the lexicon *(Hon, col. 1, line 57-col. 2, line 15)*.

15.   With respect to **claim 17**, Gammel in view of Hon teaches everything claimed, as applied

above (see claim 16); in addition, Gammel further teaches `a voice recognition`

`system as claimed in claim 16, wherein the voice recording device`

(Fig. 1, col. 2, lines 6-8, system comprises a recognition and record circuit (14)) `is`

`connected to a memory in which the voice utterance is temporarily`

`stored` *(Fig. 1, col. 2, lines 29-33; col. 2, lines 12-20, processor (12) with comparator and*

memory (15)) `and which is connected to the database for reading the`

`voice utterance into the database` *(Fig. 1, col. 2, lines 29-33, encoded templates*

are in the memory (15)) .

16.   With respect to **claim 18**, Gammel in view of Hon teaches everything claimed, as applied

above (see claim 16); in addition, Gammel does not but Hon does teach `a voice`

recognition system as claimed in claim 16, further comprising a

feature extraction device for generating a voice pattern from the

voice utterance *(Fig. 1A, 1C, & 2; col. 5, lines 46-65, signal processor (111) divides the*

digitized utterance into frames and creates a vector for each slice of the vector), the

feature extraction device being arranged between the voice

recording device and the memory *(Fig. 1A, sound sampling device (11), memory*

(3), and digital signal processor (6) are all connected via a bus (1)), with the voice

pattern replacing the voice utterance *(col. 5, lines 46-65; col. 6, lines 7-18;*

vectors represent and summarize the utterance, and are used in the comparison) .

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify the system of Gammel with the vector creation step of Hon, because it

would improve accuracy by fine-tuning the recognizer to a particular user's speech.

Conclusion

17.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Tahara et al. (US 7,299,187) teach a system and method for improving recognition

accuracy for misrecognized commands and adding new grammars for commands to the system.

Ittycheriah et al. (US 6,185,530) teach an apparatus and method for adding new words or

commands to the vocabulary of a recognition engine.

Everhart et al. (US 6,587,824) teach a method for improving recognition accuracy by

adapting speech models to a speaker's voice characteristics.

Holmes et al. ("Speech Synthesis and Recognition") teach speech recognition by pattern matching with acoustic patterns and feature vectors.

18.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to GINA W. LEE whose telephone number is (571)270-3139. The examiner can normally be reached on Monday to Friday, 8:00 AM - 5:00 PM EST.

19.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

20.   Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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